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ABSTRACT

This paper examines past and present issues in special education and offers proposals toward the goal of providing special assistance to every student who needs it. Examples of past errors include the categorical assumption that disabling conditions can be defined precisely and followed with appropriate services, and the assumption that there is a diagnostic match between the instructional needs of disabled students and the norm-referenced tests used to determine their eligibility. The discussion of present issues focuses on costs and appropriateness of special education services, suggesting that the current excessive costs of special education are largely due to the inappropriate diagnosis of many students as emotionally disturbed, mentally retarded, and learning disabled when they merely need more appropriate instruction from schools that are not structured to tolerate normal student variance. The paper proposes three strategies for the improved mastery of basic skills: motivation, teaching to mastery, and practice for automaticity. Five proposals for future special education include: (1) separating funding from the categorical assumption, (2) changing "special education" to "disabilities education," (3) coordinating legislative mandates, (4) changing paper compliance to an outcomes-based process, and (5) developing a system that is parent-focused, community-based, and collaborative. (DB)

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Focus on Special Education: Yesterday, Today, and Tomorrow

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It has been said that if we ignore the mistakes of history, we will be condemned to repeat them. In the wisdom of that philosophy, I would like to group my remarks under three general perspectives:

1. The Ghost of Special Education Past: Why change is needed.
2. The Ghost of Special Education Present: What we now know.
3. The Ghost of Special Education Future: What we intend to do.

I have selected a ghostly metaphor because there seems to be a quality of the unreal that has pervaded the subject of special education from its conception. It means different things to different people. It has appeared and disappeared in an uncanny fashion through the years, and even today, we aren't always sure whether it exists or not.

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The Ghost of Special Education Past

ISN'T THAT SPECIAL

An allegorical play in one act

The Setting: You are in a restaurant. It is the only restaurant in town, and there is only one item on the menu. You order that, and you finish it. You are still hungry, so you order more.

Waiter: "I'm sorry, but that's all you can have. It's been determined by the Diet and Food Board that one serving is all that a normal person needs."

You: "But I'm still hungry. Is there nothing you can do?"

Waiter: "There is one option. We have a very small serving room in the basement by the furnace, but it is only for malnourished persons."

You: "Let's say that I'm malnourished, then. Just point me to the basement."

Waiter: "Before you can eat down there, you have to be evaluated by the nourishment examiner to determine if you are truly malnourished. Would you like for me to refer you to the nourishment examiner?"

You: "How long will that take?"

Waiter: "We have only one examiner for this area, and he already has a heavy backlog of cases of suspected

malnourishment. It will be at least two or three weeks before he can see you."

You: "What?! Three weeks?! I'll starve by that time! Isn't it sufficient that I'm hungry now?"

Waiter: "It's the law. The special malnourishment waiter downstairs cannot serve you unless it is verified by a team representing a number of disciplines that you are indeed malnourished."

You: "This is unbelievable! I'm hungry, that's all. What kind of an evaluation can tell you more than that?"

Waiter: "As I understand it, there are any number of reasons why you may appear to be hungry or feel hungry. It is important, for example, to know how your mother fed you when you were young. Also, the examiner will go over all of the foods of the world to get some idea what kinds of foods you may have missed in your life."

You: "Does that mean you have those items on the menu in the basement?"

Waiter: "No. The menu down there is the same as it is up here. The only real difference is that down there the one item on the menu costs twice as much as it does up here."

You: "Let me get this straight. I'm hungry. In order to get anything else to eat, I have to wait three weeks to be evaluated in terms that are irrelevant to either my current hunger or the only existing menu. Then if I am

	deemed sufficiently malnourished by a team of examiners, I will get the same food that you have on this menu, but I will have to pay twice as much for it. Have I left out anything?
Waiter:	"That's about it."
You:	"Why?!"
Waiter:	"It's the law. Wonderful opportunity for the malnourished folks, don't you think?"
You:	"It may be okay for the malnourished, but it doesn't do a thing for the hungry."

With the best of intentions, a number of years ago--back when we were dreaming about what "special education" could be--we ended up with what were euphemistically referred to as unintended results. We ended up in places that we didn't expect to be and wouldn't have gone if we had known we were going to go there.

In 1981, just 10 years ago, a conference was convened at the Wingspread Conference Center in Wisconsin (the first of a series of Wingspread Conferences on special education). The purpose of the initial conference was to discuss what had gone wrong in special education--not wrong in the pejorative sense, but wrong in the sense of why we ended up with unintended results--why, for example, when we went seeking the unserved disabled population of students through programs called "child-find", we ended up with

a huge number of students in a previously unrecognized category called learning disabilities.

Serving as hosts at the conference were three of the world's leading special-education policy-analysts: Maynard Reynolds, John Brandl, and William Copeland. In a keynote address, these three gentlemen presented a report summarizing their review of 15 years of research literature on the general topic of social-service delivery-systems. Their search was motivated by a desire to learn whether or not there might be explanations for what was happening in special education--unintended results in the face of the very best of intentions.

Fifteen years of research in this area has turned up a number of factors that influence how a large service system actually works and why it produces unintended results. A few of these results are suggested as follows:

1. Pre-eminently, service is performed where the money is, regardless of whether the rhetoric says the service should be performed somewhere else.
2. Professionals provide the service they know how to provide regardless of what the recipient of the service may need.
3. When service personnel are faced with the choice of documenting compliance (as a condition of funding) or providing the services defined by the rhetoric of the system, they will document compliance first.
4. When faced with a choice of recipients who are "easy" or "hard" to serve, and formal rewards for dealing with each are equal, the service person will choose to deal with recipients who are easy to serve.
5. If portions--or all--of the service system are seen as a "free lunch", they will attract use, whether the services are needed or not."

January, 1983
Policy Studies Review, Vol. 2, Special No. 1

Overall, the first Wingspread conference was one where most of the energies were spent looking backward. Michael Scriven closed his presentation at the conference with the following words:

> "I cannot say what I think the pessimist could say about our research and our practice in special education at this point, but I think the optimist could say that we have a wonderful opportunity to start all over."
>
> January, 1983
> *Policy Studies Review*, Vol. 2, Special No. 1

And that is exactly what we did. In the 10 years since, we have done a lot of starting over; we have collected a lot of data; we have evaluated the whole concept of special education and what it was, is, and should be. That is good.

We already know many things that should be done. That is not to say that we have all the answers. But in many cases, we aren't implementing what we know NOW. So let's start with what we know. And when we are implementing what we already know that works, we will learn other things that work even better.

And now we are poised on what I believe is to be the most exciting decade of my educational experience, perhaps the educational experience of this century. But let me not get ahead of my story. We aren't quite finished with the ghost of special education past.

I am convinced that we have not carefully considered the basis for some of our traditional practices in special education, and consequently with the best of intentions, we have actually contributed to the problem that we sought to alleviate. Calvin Coolidge had a saying which I adopted as my first law of life:

There is no right way to do the wrong thing.

Please permit me to share what I believe are the two most incidious examples of this from the ghost of special education past.

The Categorical Assumption

We have built special education on the assumption that there are disabling conditions that can be defined precisely and which, when defined, automatically prescribe the services that are needed to accommodate the needs of the students with those conditions. We now know that, with some of the categories, this is wrong. Let me demonstrate the seductive manner in which such an assumption took us down the wrong road.

All of the special education categories can be divided into two groups:

Fact

Theory

Consider the major categories that we use:

Blind and Visually-impaired; is it fact or theory? There is no question; it is a fact. A person's ability to see or not see can be defined precisely, and it can be reliably assessed with virtually no disagreement whatsoever.

Emotionally Disturbed; is it fact or theory? Clearly this is a theory. The category is based on any number of hypothetical sub-conditions that are also theoretical. A student can be defined as emotionally disturbed in one district and not in another. The definition is ambiguous and subject to extensive interpretation.

Deaf and hearing-impaired: is it fact or theory? Again, there is no question; it is a fact. The degree of hearing that a person has or does not have can be measured precisely.

Learning Disabled; is it fact or theory? Given the amount of literature that has been produced over the past thirty years on whether or not this category actually exists, and the resulting lack of conclusion, there is certainly no question that it is an attempt to explain theoretically certain observed behaviors, which are in turn correlates of poor achievement.

Physically-disabled; is it fact or theory? The fact of a physical disability is perhaps the most self-evident of all of the categories. That is not to deny the existence of more mild forms of physically disability which are more difficult to detect, but such forms are still relatively easy to detect because they have a clear physical base of diagnosis that does not require theoretical interpretation.

Mentally Retarded; is it fact or theory? Be careful with this one. If you respond too quickly, you may say "fact", but the concept of mental retardation is now, and always has been, a theory. The fact that many severely "retarded" persons have associated physical anomalies may cause us to think that the category is a fact, when the fact is the physical symptom--not the category.

The categories provided a convenient method of selecting persons for service. When we accepted, as a fact, the theories associated with the categories, we then had a structure within which to build a service-delivery system. For reasons that are buried in the traditions of society, there is a very strong tendency for us to seek to concretize the structures that we create. The mechanism that society has invented to perform this function is called the bureaucracy. This is not an indictment of the bureaucracy, per se, only a description of one of its most vulnerable points. For all of its values, there is a tendency for the bureaucracy to suffer from what someone has called "hardening of the categories"--the condition in which the categories become more important than the people they serve.

I am reminded of Procrustes who, according to Greek mythology, provided lodging for weary travelers. The lodging, along with food and entertainment, was all free. The meals were prepared from the very best food by the very best cooks; the facilities were spacious; everything that could be provided for the comfort of the guests was provided at absolutely no charge. There was only one rule to be eligible for this wonderful service. Every guest had to fit the bed provided. If he was too short, he would be

stretched; if he was too tall, his feet and legs would be cut off to fit. Those that fit the bed enjoyed a most wonderful time and had nothing but praise for the beneficent Procrustes, urging their friends far and wide to stop in and enjoy his gracious hospitality. But many people died in that house, and no one heard of their experience in the same location; for them, the free hospitality was not appropriate.

Categories which are intended to INCLUDE also EXCLUDE, and the temptation is often strong to stretch the individual to fit the category rather than to provide flexibility within a category to meet the needs of an individual.

By successive approximation we have allowed ourselves to be seduced by the labels we have created.

First there was MR theory--then there were MR people who needed special MR treatment. Not enough dollars were available, so we changed the theory and reduced the number of MR people eligible for MR treatment.

Illustration of Fiscal impact on Theory and Practice

But there were still needs, so we created additional labels--MBD/MBI-- with the same result.

Then came LD, with the same result. Then dyslexia, dysgraphia, dyscalculia--a dys-ease approach to service delivery

where treatment of symptoms is more important than addressing the root cause of the symptoms.

Now comes Scotopic sensitivity syndrome, ADD or ADHD, with and without hyperactivity, ad nauseum.

All defining people in terms of external behavioral characteristics which, while they are certainly correlates of school failure, may in fact be the result of other causes, i.e., poor instruction. Boys are by nature more active than girls--we may be tempted to define that extra burst of action as ADHD and then prove that it exists by counting normal behaviors as variant. This then defines an unmet need which justifies the requirement of yet another category of state/federal support.

The end result of the willing self-seduction has been to dilute much-needed resources across a very large and diverse population of students, leaving the system short of the necessary legally mandated and legislatively appropriated funds for disabled students who need "specially designed instruction" BECAUSE of the nature of their disability.

The Standards and Norms Assumption

By the same sort of seductive reasoning that led us down the categorical road, we have built special education on the assumption that there is a diagnostic match between the instructional needs of disabled students and the standardized, norm-referenced tests used to determine their eligibility.

Let me illustrate: As long ago as 1978, the literature contained clear evidence of our mistaken dependence on this assumption.

Grade-equivalent scores obtained by matching specific reading text words to standardized reading test words

Tests	PIAT	MAT	SORT	WRAT
Curricula				
Bank Street Reading				
Grade 1	1.5	1.0	1.8	2.0
Grade 2	2.8	2.5	2.9	2.7
Keys to Reading				
Grade 1	2.0	1.4	2.2	2.2
Grade 2	3.3	1.9	3.0	3.0
Reading 360				
Grade 1	1.5	1.0	1.4	1.7
Grade 2	2.2	2.1	2.7	2.3

Jenkins & Panny (1978)
Exceptional Children

Following the appearance of the above report, there followed a plethora of such studies, all demonstrating the same results: One published in 1980 looked at the relationship between topics covered in textbooks and those covered in the most popular standardized achievement tests.

Percent of tested topics covered in each textbook

	Tests				
Textbooks	MAT	SAT	Iowa	CTBS I	CTBS II
Houghton-Mifflin	60%	51%	63%	57%	58%
Scott-Foresman	71%	52%	66%	57%	68%
Addison-Wesley	60%	47%	53%	54%	61%

This subject was revisited in 1987 by Shapiro and Derr where they reported yet another study with the same conclusions, and summarized the results with the following report:

> Results of this study clearly support Jenkins and Panny's (1978) findings that little overlap exists between the content of standardized reading achievement subtests and basal reading curricula.
>
> A particularly interesting result of the present study is that overlap diminished as grade level increased.
>
> Shapiro & Derr (1987)
> An examination of overlap between reading curricula and standardized achievement tests.
> *The Journal of Special Education*, Vol. 21, No. 2, pp. 59-67

Yet, virtually every state in the United States requires such a measure as a basis for determining the discrepancy between achievement and ability.

What is perhaps more amazing to me, in terms of the manner in which we allowed ourselves to be seduced into using such inappropriate measures, is the fact that the statistical principles underlying these tests and their application have been well-known from the inception of their development decades ago. And all of us who took courses in test-construction and assessment techniques should have recognized the inherent impropriety of using standardized measures to assess the learning of individual students.

A 1978 statement by Dr. Popham, the champion of criterion-referenced measures, puts the subject succinctly into perspective:

> "Test items on which pupils perform particularly well tend to be items covering the very concepts that teachers thought important enough to stress. The more important a topic is, the more likely a teacher is to emphasize it by devoting instructional time to its master. The more instructional time devoted to a topic, the more likely that the...test items related to that topic will be answered by many examinees. The more often a test item is answered correctly, the more likely that, in time, it will be removed from the test. With oft-revised norm-referenced tests, items measuring the most important and the most often taught things tend to be systematically eliminated from the test. What we have left in norm-referenced tests are items that measure unimportant things."
>
> Popham, W. J., 1978
> *Criterion Reference Measures*
> Englewood Cliffs, NJ: Prentice Hall

Just because a student is deemed to fit the eligibility requirements of a given special education category and an Individualized Educational Plan has been agreed to by all of the required parties, doesn't guarantee the delivery of an appropriate education when the parties involved are unaware of what will work for that student. Research and practice throughout America are replete with examples of promising practices which demonstrate positive effects--practices which, for the most part are NOT being used. It is not necessary to fund further research on what works. We know what works. It is time to do it.

And that brings me to...

The Ghost of Special Education Present

The present status of special education varies considerably, and must be considered as an accumulation of what we have learned and are now able to do as the result. What I am about to cover is certainly not accepted practice everywhere, but every point that I intend to share is solidly based on research and represents the state of the art right now.

To begin a discussion of the present, let us refer again to the law. We have been charged by law to provide a "free and appropriate" education for all disabled students. We have paid great respect to that word "free," but I suggest that we have paid much less attention to the word "appropriate". I intend to divide my remarks relative to the present into these two arenas: cost and appropriateness.

Funding

Virtually every state in the Union is experiencing severe shortages of funds to pay for what they assume to be the fulfillment of the law. I believe that two conditions have precluded the effective and efficient fulfillment of the original intent of the legislation from a fiscal perspective: (1) The Regulations governing the implementation of the law and the built in controls to determine compliance--both at the national level and at the state levels--have been compromised by mixing fiscal concerns with program decisions in the determination of what is appropriate. As a consequence, it has become accepted practice, at least in part due to the fiscal incentives involved to define as exceptional any student experiencing difficulty in school and to

provide approved special-education programs for the education of such a student.

Over time, the number of the "at-risk" types of students being placed into special education programs has grown exponentially until the cost of providing special education far exceeds available funds. Adequate funding is not just important; it is essential. Education costs money, there is no doubt about that, and to provide excellence in education, more money may be needed. But before we can determine whether or not we need MORE MONEY in special education, we must pursue a more responsible evaluation of WHAT IS APPROPRIATE.

The term "appropriate" is often defined as properly filling out the necessary paperwork to assure compliance with the law. Such a definition certainly provides a convenient way to comply with state and federal regulations, but it fails to address the inherent purpose of both the state and federal law requiring a free and appropriate education for the handicapped learner. For one thing, it fails to address the difference between special education that is needed by handicapped students and the special education that is needed by all students at times. A way must be found to provide the APPROPRIATE programs and services needed by identified exceptional students without denying the equally appropriate services needed by those students who are not exceptional.

Where the more severe, physically related handicaps are involved, it is relatively easy to determine the nature of an appropriate education. For example, students with physical disabilities need such assistive devices as electronic

communication aids, braces and wheel chairs; the blind and visually-impaired need such services as training in braille and in orientation-and-mobility; the deaf and hearing-impaired need hearing aids and training in alternative methods of communication. When the disability is physical in nature, the student's needs are self-evident, and the evaluation of our ability to deliver the programs and services to meet those needs is relatively simple.

You might be interested to know that the total number of persons with such needs represents less than one per cent of the population. That is a particularly interesting fact in light of the accompanying fact that we are serving, in special education, an average of 9% to 10% of the population.

When the disability is an emotional, mental, or learning disorder, as it is with the vast majority of students currently receiving special education services, the needs are more difficult to observe and therefore the outcome-based measures of our effectiveness are more difficult as well. It is in these areas that the misappropriation of the special-education program has occurred. The excessive costs being sustained in the name of special education are realized, for the most part, in serving those students who have been inappropriately diagnosed as emotionally disturbed, mentally retarded, and learning disabled. Research supports the hypothesis that most of the students currently represented in these three theoretically defined categories are curriculum casualties--students who are at risk because of inadequate (or inappropriate) instruction) they are NOT disabled students.

> Supplemental or remedial instruction can be equally effective whether provided as compensatory education, special education, or regular education.
>
> A dollar spent on compensatory education may, in fact purchase 25% to 35% more instructional help than the same dollar can purchase in special education where teachers are forced to spend 35% to 50% of their time on paperwork, meetings, and mandatory non-instructional procedures.
>
> Special Commission on Special Education, State of Vermont, January, 1990.

2. Appropriate: Education is APPROPRIATE only if it WORKS. And the degree to which it works must be evaluated by outcome-based measures--not by paper compliance with regulations and standards.

Just because a student is deemed to fit the eligibility requirements of a given special education category and an Individualized Educational Plan has been agreed to by all of the required parties, doesn't guarantee the delivery of an appropriate education when the parties involved are unaware of what will work for that student. Research and practice throughout America are replete with examples of promising practices which demonstrate positive effects--practices which, for the most part are NOT being used. It is not necessary to fund further research on what works. We know what works. It is time to do it.

The most descriptive statement of appropriate education that I have read is one made by Dr. Spady in 1984:

> "Excellence occurs when the instructional system is able to provide the individual learner with an appropriate level of challenge and a realistic opportunity to succeed on a frequent and continual basis for each instructional goal in the program."
>
> William Spady (1984)
> Organizing and delivering curriculum for maximum impact.
> *Making our schools more effective: Proceedings of three state conferences.*

The concept of appropriate, at least within the context of disabilities education, must be dealt with in at least two domains: (a) the quality of instruction provided, and (b) the quality of the location in which instruction is provided. The latter, often referred to as least restrictive environment or LRE, has received the lion's share of the attention, while the former has been more or less left to chance and the level of skill that happens to exist in the selected location.

Here again, we have been seduced into an assumption that illustrates the Calvin Coolidge assertion that "there is no right way to do the wrong thing." A person can be mistreated in the best environments. The quality of service (specially designed instruction, in this case) simply has to be included as an essential ingredient in the mix of issues that we consider when determining the least-restrictive environment.

The term INCLUSION has been receiving a lot of attention lately. While neither the word inclusion nor its predecessor terms,

integration and mainstreaming, appear in federal law, the concept upon which these three terms have been based is firmly established in law. The specific citation in federal law which serves as the basis for these terms is found in Section 300.550 of Title 34 of the Code of Federal Regulations. It reads as follows:

"Each public agency shall insure;

(1) That to the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities are educated with children who are not handicapped, and

(2) That special classes, separate schooling or other removal of handicapped children from the regular educational environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily."

Section 300.550 of Title 34)
Code of Federal Regulations

The mandate is clear, but so are the conditions under which this mandate is to be carried out. Here again, the word "appropriate" figures prominently, and the necessity for "supplementary aids" cannot be overlooked. No student currently receiving special education should be "dumped" into regular education classes just because someone has heard about a concept called "integration" or "inclusion."

So let us look at the quality of instruction that is required under law. A fact that is very often overlooked is the very definition of "special education" in federal law:

> The term "special education" means specially designed instruction, at no cost to parents or guardians, to meet the unique needs of a child with a disability.
>
> Section 1401(a)(16)
> Individuals with Disabilities Education Act

Instruction is the single most powerful element in determining the appropriateness of a program for disabled learners, and yet, it is often the least-considered element, in favor of more mundane issues like eligibility, available space, class size restrictions, cost, pressure to move a given student, and the like. Why is that?

Could it be that even with the great amount of time and energy that we spend on the improvement of our instructional capability, we may be accidentally ignoring some very basic facts about our system? Return with me for a moment to the discussion of standards and norms and think of that subject as it relates to the variance of students in a classroom. To make this point, I will draw from a book by my friend, Dr. Charles Hargis of the University

of Tennessee. He is referring to the normal student variance that occurs in a classroom:

"How much variation within the manufacturing process can be managed before defects appear? In manufacturing things, tolerances need be, and can be, kept quite small. If the items being assembled are all within tolerance, the manufacturing process goes smoothly and the resultant product performs appropriately.

We can control the tolerance measures much better for them than we can for humans. Tolerance limits must be viewed very differently when humans rather than machined parts are concerned.

Most people fit adequately within the tolerance levels of most standardized items (e.g., the height of doorways, the length of beds). However, a significant number don't and they may well experience the inconvenience or discomfort of being out of tolerance on some dimension.

No one has ever suggested, to my knowledge, that if people don't fit the standard, the people be altered in some way so they do. However, it seems quite clear that we expect to alter children to fit the standards by school curricula.

As it turns out, the students are remarkably variable and the schools have rather limited tolerance. . . . schools have, at the primary level, tolerance limits of about ± six months (Spache, 1976)*."

Hargis, C. H. (1989)
Teaching low achieving and disadvantaged students.
Charles C. Thomas, Publisher, Springfield, Ill.

*Spache, G. D. (1976)
Investigating the issues of reading disabilities.
Boston: Allyn and Bacon

Now, let us apply the Spache findings to our typical school situation where a student who experiences difficulty might be referred for a multidisciplinary evaluation because of a suspected disability. Consider the normal variance between high-achieving and slow-achieving students. To make this point even more obvious, let us assume that the limits of "normal" can be indicated by measured intelligence, an assumption that we know does not hold up, but it will serve for this illustration. Further, let us assume the most conservative limits possible--a range from IQ 80 to IQ 120. In most states, the range is from IQ 70 to IQ 130, but we want to be on the safe side in this illustration.

So we have a range of normal variance that would be accepted in virtually any system of education in the nation--IQ 80 to IQ 120. For the purposes of this discussion, we will allow that anyone with measured IQ above or below this range is exceptional, but that within this range, the learner has normal intelligence. Measured intelligence is, of course, based on a measure of mental age compared to chronological age.

Take age 6--the age at which most children enter first grade.

IQ 80 = mental age of 4.8 years.

IQ 120 = mental age of 7.2 years.

The NORMAL variance in the measured intelligence of a homogeneous group of first graders is 2.4 years, or about 29 months (± 14.45 months)--MORE THAN TWO TIMES THE LIMIT OF TOLERANCE.

> And that variance increases by .2 year upward and .2 year downward each year.
>
> By the fourth grade, for example, the normal variance in measured intelligence of a homogeneous group is:
>
> IQ 80 = mental age of 7.2 years.
>
> IQ 120 = mental age of 10.8 years.
>
> The NORMAL variance in the measured intelligence of a homogeneous group of fourth graders is 43.2 months (± 21.6 months)--MORE THAN THREE TIMES THE LIMIT OF TOLERANCE.

It is interesting to note that it is at the third and fourth grades that we experience the most dramatic influx into special education.

And, please, don't forget that this illustration was based on a most conservative definition of normal. The "real" variance in a "normal" group of primary grade students is much greater because of the naturally varying conditions of the environment and the fact that the students in a given classroom range in chronological age by up to 12 months or more.

The point, of course, is that our rhetoric is often based on one belief system, while our practice is based on another. We talk about a theory of normal that includes a broad range of students, but when the tolerance of our system cannot accommodate that range, we have to create alternative systems that will. It is my considered belief that special

education, along with Chapter I, and other "special" treatment programs, accomplish them.

A few years back, Dr. Jay Samuels of the University of Minnesota, was asked by the National Institute of Education to interview the staff members of U.S. Congressional Education Committees to determine what had been the intent of Congress when it passed the Basic Skills Act--just what did Congress mean by "basic skills." It was not at all surprising that there was wide divergence in what was viewed as basic skills, but in 1984 Samuels reported that, generally, the skills fell out in the five traditional categories of reading, writing, mathematics, speaking, and listening. Relating to the first three of these as "human inventions which are found only in literate societies," Samuels makes the following remarkable statement:

> "Even modest IQ levels, within the 50-70 range of educable retardation, seem to be sufficient for mastering the basic skills which originate through human invention. Why then, one wonders, if the basic skills can be acquired with IQs in the 50-70 range, are there so many children who fail to master them despite having levels of intelligence substantially higher?"
>
> Samuels, S. Jay (1984)
> Basic academic skills
> *School psychology: The state of the art*
> Minneapolis: The University of Minnesota

Why, indeed?

Dr. Samuels goes on to answer his own question by asserting that the problem is one of expectation, motivation,

and instruction. It is not safe to make categorical statements of simple solutions to complex problems, but generally speaking, Samuels offers three things that teachers can do to help students master the basic skills:

> "In many ways, good athletic coaching and good classroom teaching have much in common, and principles of coaching applied to the classroom can help students master the basic skills.
>
> In essence, to master the basic skills either in sports or the classroom, three elements are necessary:
>
> 1. Motivate the student.
>
> 2. Bring the student to the level of accuracy in the skill, and
>
> 3. Provide the practice necessary for the skill to become automatic."
>
> Samuels, S. Jay (1984)
> Basic academic skills
> *School psychology: The state of the art*
> Minneapolis: The University of Minnesota

Essentially: motivate, teach to mastery, and practice until it is automatic.

Let's briefly discuss what we know about these three principles--in practical terms. For reasons that will become clear later, I will hold the discussion of "motivation" until last.

Teach to Mastery

"Mastery" is so well understood that it hardly deserves mention here except to make one point. The term can be defined (or defiled) by bureaucratic interpretation to mean something that it is not! For example, it is becoming quite commonplace to hear statements like, "70% mastery" is a criterion for success. That is like saying that someone is 70% dead! Such misuse of a very effective term certainly limits its usefulness. "Mastery" means precisely that--mastery! Nothing short of 100% is mastery. A bridge reaching 70% across a chasm is a bridge to nowhere!

"Mastery" is one of the foundation principles of individualized instruction. Goals and objectives are written in terms of facts, concepts, and instructional units to be mastered. Unless the basic content to be learned is clearly understood (mastered), it is meaningless to practice it until it becomes automatic.

Practice Until the Skill Becomes Automatic

You have heard the term "practice makes perfect." Actually, as you all know, practice makes permanent. Only perfect practice makes perfect. Homework, for example, should be practice--not mastery. If a student takes work home that has not been mastered, that student is destined to reinforce his or her lack of understanding, which often translates into "get someone else to do it."

But, let me over-simplify an instructional principle that has been known since the 1930s when Dr. Gates reported the results of his research on the role of repetition in learning:

> In order for a fact or a concept to become automatic (readily available in a long-term memory), a measured number of repetitions are necessary, depending on the ability level of the learner:
>
> | | |
> |---|---|
> | "High" ability (IQ 120) | 25 repetitions |
> | "Average" Ability (IQ 100) | 35 repetitions |
> | "Slow" Ability (IQ 80) | 55 repetitions |
>
> Gates, A. I. (1930)
> *Interest and ability in reading*
> New York: Macmillan

Motivate the Student

Here is where, in the last decade, we discovered pure instructional gold. What I am about to share with you is the single most powerful motivational technique of instruction that I have ever seen. The concept was actually described first by Dr. Betts of Temple University in 1957. But, the concept lay dormant for most of 20 years before it received wide instructional application in America: "Independent Level (97-100% known material); Instructional Level (93-96% known material); and Frustrational Level (less than 93% known material)" (Betts, 1957, in Gickling & Thompson, 1985).

It was Dr. Ed Gickling, then of the University of Tennessee, who applied the Betts concept to classroom instruction on a broad

scale. His classic study, published in 1978, is perhaps still the best illustration of the motivational aspects of appropriate instruction.

Motivation

Motivation is a natural learning state that exists between frustration and boredom in which the inclination to learn is intrinsic to the learner, not induced by external state. Another study, also done by Gickling and his associates, illustrates a timely fact. The issue of Attention Deficit Disorder (ADD) is not going to go away until we can demonstrate that the problem is one of instructional relevance rather than of dealing with a disability.

The Ghost of Special Education Future

The future is evolutionary. Our best thoughts of today will be altered, in most cases, significantly by events as they unfold. But, as John Scully has said, "The best way to predict the future is to invent it." If you believe that, and I do, then you have to accept that the future is NOW!

It also occurs to me that we could take John Scully's statement and turn it around. What we have learned about the power of suggestion-and-expectation theory leads me to conclude that one of the best ways to invent the future is to predict it. Obviously, there is more to the future than current predictions. Recently, I had the occasion to review some delphi research in which I participated in the mid-1970's. The research was conducted by leading delphi technologists of that time. It was interesting to note that what we predicted in 1975 as happening

over the subsequent 5, 10, and 15 years has, in most cases, not happened. Furthermore, the values upon which those predictions were based have altered significantly. So, predictions in isolation do not invent the future; but predictions based on expectations that are, in turn, based on strongly held beliefs that are supported by real data translate into action that does invent the future.

The world stands on the threshold of its greatest challenge to date--survival in a technological society where the destructive forces seem to be increasing faster than our ability to find solutions to them. Our need to provide for the fundamental needs of exceptional children is only one of the many issues that have to be resolved, but it is a worthy one. The challenge before us in that arena alone is a complex one: We will have to proceed on a number of fronts simultaneously. There is no linear path that can be taken at this time. We must provide a number of BOLD NEW STROKES that will take us into the 21st Century. To that end, I offer the following five inventions of the future. The five can be divided into two general categories--Free and Appropriate.

Free

Funding

The word "free" in the law means adequate funding. It is only free to the parents or guardians in terms of any individually assessed "value-added tax." IT is not free in the general sense of a charge against the public tax base. So, we have to address the cost of an appropriate education for disabled students, and we have to provide for that in realistic terms.

To begin with, we must build flexibility into our current funding systems. We can fund results rather than ADMs, contact hours, and head counts. We can worry less about whether special education funds are being diverted to purchase football helmets because, when the outcomes are clearly specified, such issues are less important. It occurs to me, however, that football helmets may be one of the best and most effective pre-referral strategies in the prevention of traumatic brain injury.

The only way to protect against the fiscal abuses that are rampant in the nation is to cleanly separate the funding from the categorical assumption. We now have two decades of data that tell us how many disabled students there are. We can build an adequate funding base on this data, and we can get away from such artificial and inappropriate funding concepts as the "child count." At least one state has already done this; several others are considering such a change, and we are encouraging the Federal Government to follow suit. This change, in part, depends on a change in the definition of "special education."

Change "Special Education" to "Disabilities Education

We must begin immediately to explore ways of getting away from the term "special" education as a descriptor of what we are all about. Every person in the world needs an education that is special--specially designed to meet his or her specific needs. By the unfortunate act of history, we have conceptually limited special consideration of the individual student to handicapped persons.

There is nothing inherently "special" about reducing the student-teacher ratio--even to a one-to-one ratio. All students occasionally need a very low student-teacher ratio; e.g., driver education, music lessons, detention, and even academic assistance after school. Being a "slow" student who is unable to keep up with the "rest of the class" when the pace is set to a norm that is unnaturally high for that student doesn't make either the student "handicapped" or the tutoring that s/he needs "special education" if the nature of the intervention is the same, but slower. Neither is routine instruction at a lower student-teacher ratio in and of itself "special," it is only more intensive.

We will have to more specifically define what we have traditionally called "special education." I offer one such definition for your consideration, and I will use the term "disabilities education." It is descriptive, it is consistent with the full range of national legislation relating to the needs of children and youth with disabilities:

Disabilities Education--specially designed instruction, where the actual techniques are impairment-specific and require special training to deliver.

(e.g., training in the use of assistive devices, orientation and mobility training, braille training, physical therapy, and occupational therapy.

Appropriate

Coordination of Legislative Mandates

We must have effective coordination and implementation of existing legislation. For example, there is a dynamic interface between the Individuals with Disabilities Education Act (IDEA)--P.L. 101-476 and Section 504 of the Rehabilitation Act. The former provides for specially designed instruction; the latter, reasonable accommodation for such basic rights as access to the school environment. The two are often confused, and the endless debate over which rules apply often takes our efforts away from implementing the very services that both acts demand. One of the primary reasons for such debate is the fact that the Section 504 guarantees are not tied to restrictions of funding or governance, thus emphasizing outcomes instead of eligibility. On the other hand, legislation such as P.L.s 89-313, 94-142, 99-457, and 101-476 carry extensive limits involving funding and governance, thus emphasizing eligibility instead of outcomes.

Change Paper Compliance to an Outcomes-Based Process

Last year at a meeting in Washington, D.C., we heard David Hornbeck call for protecting students via outcomes rather than wrapping them in regulations. The term "appropriate education" must be defined, as required by law, in terms of the individual student's need for specially designed instruction, using the word "instruction" to apply to all of the specific educational needs of each student.

Fundamental to such a definition is a dramatic shift in the forms of assessment that we practice. We waste an inordinate amount of time and resources on determining a student's eligibility for special education without assessing the instructional needs of the student. The recent study conducted by Decision Resources Group concluded that we spend in excess of $1270 per student just in the eligibility determination. And after we have spent that amount of money, we still place students into inappropriate instructional settings where they are as likely to fail as they were before they were referred.

We have been beset with regulations that require documented evidence of "planning," so much so that the plans themselves become the end instead of a means to an end. You have your IFSPs, your IEPs, your ITPs, and your IWRPs and, as a result, what do you get? A lot older, and deeper in debt.

There is no reason whatsoever for all of those different planning documents. We should have plans, and they should be developed jointly by all of the appropriate participants, but there should only be ONE PLAN! We need one plan that represents the integration of all needed services from birth to successful achievement of post-secondary outcomes. Call it what you wish: I call it an ISP--Individual Service Plan--but you could just as easily call it an Individual Family Service Plan (IFSP).

Educational services provided for disabled students must be evaluated in terms of outcome-based measures rather than by achieving some artificial norm-referenced objective from a computer-generated bank of objectives.

Ultimately, the success of what we do will be determined by whether or not students learn more and are more successful, whether more high school graduates are employed and/or go on to college. The results will speak for themselves.

A System that is Parent-Focused, Community-Based, and Collaborative

Finally, and I think perhaps the most important of all--all elements of society working together. We must realize the potent value of parents and the community in providing for the educational needs of all children and youth, including the disabled learners. And, we absolutely have to develop the skills necessary to work together on behalf of the education of all members of the next generation.

In the future we will see dramatic changes in the way that educational delivery systems are structured and in the way that educational services are delivered. For example, we will see:

- Neighborhood schools as community learning centers--for learners of ALL ages.

- One-stop learning-support which includes: information, referral, and follow-up; comprehensive health care services; multi-agency responsibility.

- Graduated learning options, which are outcomes based.

- Lifelong learning opportunities (career ladders) for ALL learners.

- Educational programs which treat diversity as a strength: multicultural exploration and celebration; instructional accommodation to the natural variance of ALL learners.

- Integrated vocational education for ALL learners of ALL ages: educational "leave" without age limit.

- School districts as integrated systems of higher education: mentorships, apprenticeships, career ladders based on professional achievement.

We must become acutely aware of the many human resources that come to bear on the lives of children and youth. It is extremely important that we participate in aggressive networking. I propose for your consideration the Darth Vader model of networking: 17 linkages which are vitally important, any one of which, if ignored, weakens our program.

What is the Overriding Goal to be Achieved?

The goal is really very simple--every student who needs special assistance in order to succeed in school will have it readily available when and where it is needed. The goal is eminently achievable. We are not talking about luxury, but rather about a basic necessity for the survival of civil and personal freedoms.

There is also the question of funding; there are those who believe that more money somehow translates into better, or at least not worse, services. While it is true that sufficient funds are needed, and in some instances more funds are needed, the results achieved within a number of the models of promising

practices have demonstrated that good education can, at least in some instances, cost LESS than poor education. And in the larger societal context, good education absolutely costs less than poor education.

Let us not be blinded by existing ideas of funding or service delivery. Let us be as creative as necessary to provide what is needed. We may be surprised to find out that, while the cost is great, the mission is sufficiently worthy to rally the resources necessary to accomplish it. The United States is still the most highly endowed nation on earth. It is inconceivable that a nation that can place a man on the moon will not teach its children to read.

How Long Will it Take to Reach this Goal?

It will take us from 5 to 20 years, depending on how we work together to provide the necessary program and fiscal supports that will be required. One of our chief faults as a modern society is that we tend to think AND ACT within the confines of political terms of office. All of the research that we have to date on how program change occurs tells us that such change takes more years than are available within a typical governmental term of office. Our efforts must, therefore, transcend the political realities that exist and provide for the needed consistency of policy and resources over time to see us through.

I repeat. We know HOW to achieve the goal. We have the technology and the resources to achieve the goal. All that remains now is to get to work.